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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,711	07/28/2003	Irfan Rahim	009818-0076-999	6759

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EXAMINER

CHAN, EMILY Y

ART UNIT PAPER NUMBER

2829

DATE MAILED: 02/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s) <sup>4</sup>	
	10/628,711	RAHIM ET AL.	
	Examiner	Art Unit	
	Emily Y. Chan	2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 January 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 15-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-14, 25 and 26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION.**

1. Applicant's election of claims 15-24 in the reply filed on 1-18-05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

***Drawings***

Each box in fig 1 should be labeled.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 15-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al US Patent No. 6,683,767 in view of Giacomotto et al US patent 6,744,242.

With respect to claims 15 and 22, Ito et al ('767) disclose a voltage regulator for providing an operating voltage to an integrated circuit (see Figs 1 and 27-28) as claimed, comprising:

a voltage down-converter (150-157) arranged to convert a chip-external supply voltage ( $V_{ext}$ ) to a converted voltage ( $V_{int}$ ) based on a signal indicative of a desired

value of the converted voltage and output the converted voltage as the operating voltage; and

an adjustable signal generator (60, 100) for adjustably generating the signal indicative of the desired value of the converted voltage (see Col. 3, lines 23-28).

Ito et al ('767) do not disclose a detector for measuring at least one electrical or operational parameter of the integrated circuit.

Giacomotto et al ('242) disclose an on-chip voltage regulator circuit (see Fig. 4, 480) for regulating multi-cycle voltage fluctuations of an integrated circuit associated with changes in current demand of the integrated circuit (see Abstract, lines 4-7) and particularly teach a detector (threshold sensors 410) for measuring at least one electrical or operational parameter of circuit (see Col. 2, lines, 62-67 "to sense a microprocessor circuit operating voltage").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to incorporate the Giacomotto et al ('242)'s detector in Ito et al ('767) 's voltage regulator for the expected benefit of preventing an undervoltage and overvoltage conditions of the integrated circuit as disclosed by Giacomotto et al ('242) (see Abstract, last two lines).

With respect to claims 16 and 22, Ito et al ('767) disclose the voltage regulator (150-157) is an on-chip voltage regulator.

With respect to claims 17 and 24, Ito et al ('767) disclose that their adjustable signal generator (60, 100) is implemented in a programmable logic device (see Figs. 29-30).

With respect to claim 18, Giacomotto et al ('242) disclose a detector (110, 410) for measuring at least one electrical or operational parameter of the integrated circuit (see Col. 2, lines, 62-67 "to sense a microprocessor circuit operating voltage") and an evaluator (120, 423 and 440) to determine the desired value of the converted voltage based on the parameter measured by the detector (110, 410) and to supply a signal to the signal generator (130, 450) indicative of the desired voltage.

With respect to claim 19, Giacomotto et al ('242)' s detector (110, 410) and evaluator (120, 423 and 440) are on chip (see Fig. 1B).

With respect to claim 20, Giacomotto et al ('242)' s evaluator (120, 423 and 440) is implemented in a programmable logic device (see Figs. 4 and 6).

With respect to claim 21, Ito et al ('767) 's reference circuit structures are circuit structure of the integrated circuit (See Col. 2, lines 25-27, "third area for laying first internal circuit which operate based on the internal power voltage").

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hiraki et al US patent 6,424,128 disclose an electronic device having power supply regulators controlled according to operation mode of integrated circuit.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emily Y. Chan whose telephone number is 571-272-1956. The examiner can normally be reached on 8:30-5:30.

Art Unit: 2829

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EC  
2-14-05

  
VINH NGUYEN  
PRIMARY EXAMINER  
A.U. 2829  
02/16/05